

Remarks

Reconsideration and allowance of this application, as amended, are respectfully requested.

Claims 1, 4-11, 15, 17, 18, and 23 have been amended. Claims 2 and 3 have been canceled without prejudice or disclaimer. Claims 1 and 4-25 are now pending in the application. Claims 1, 17, and 23 are independent. The objections and rejections are respectfully submitted to be obviated in view of the amendments and remarks presented herein. No new matter has been introduced through the foregoing amendments.

Claims 4-11 and 15 have been amended to overcome the objection under 37 CFR § 1.75(c). Claims 1 and 4-16 are now all directed to the process embodiment of the invention.

To advance prosecution, claim 1 has also been amended to incorporate the features of the invention previously recited in now-canceled claims 2 and 3. And, claim 1 has been amended still further to even more specifically define the step of diverting the feed ink through the bypass line. Thus, instant claim 1 defines a process that includes the feature of "the feed ink being diverted through a bypass line that departs from the feed line and leads directly to the ink tank." Support for the instant recitation is found in Applicant's Figures 1 and 2 and at, for example, specification page 3, first full paragraph, where Applicant discloses that:

[i]n order to be able to provide two pumping capacity devices according to the invention with an established efficiency ratio, then in accordance with the invention, at least one bypass must be provided that comprises a line branching out from the feed lines. Purposefully, *the outbranching line channels the ink directly back into the ink tank.* (Emphasis added)

Independent claims 17 and 23 have been amended in a manner that parallels the amendment of claim 1. Instant claim 17 defines a device that includes "a first bypass line configured to controllably divert from an ink feed line that feeds the ink from an ink tank to the squeegee device a portion of the feed ink, *the first bypass line departing from the ink feed line and leading directly to the ink tank.*" Instant claim 23 defines a device that includes in pertinent part the feature of "the first bypass line departing from the ink feed line on a discharge side of the ink feed chamber and communicating the diverted feed ink *without supplemental pumping thereof* to an ink tank." Entry of each of the amendments is respectfully requested.

35 U.S.C. § 102(e) - Heller

Claims 17, 18, 20, and 22 stand rejected under 35 U.S.C. § 102(e) as being anticipated by US 2003/0084805 A1 of Heller et al. (hereinafter "Heller").

The rejection of claims 17, 18, 20, and 22 under § 102(e) based on Heller is respectfully deemed to be obviated. For all of the reasons articulated in Applicant's reply filed June 4, 2007,

and for at least the following reasons, the disclosure of Heller does not anticipate Applicant's presently claimed invention.

As indicated above in the introductory remarks, Applicant's instant claim 17 defines a device that includes "a first bypass line configured to controllably divert from an ink feed line that feeds the ink from an ink tank to the squeegee device a portion of the feed ink, *the first bypass line departing from the ink feed line and leading directly to the ink tank.*" See Applicant's Figures 1 and 2.

Heller's device is structurally and functionally different from Applicant's claimed device. According to Heller, the bypass 47 departs from the feed line 27 at the discharge side of the feed chamber 19 *and connects to the return line 41 on the suction side of the return chamber 21.* Therefore, when Heller's bypass configuration is used in a printing machine equipped with a squeegee device, the volume that must be pumped by the return chamber is even greater than simply the increased return flow rate from the squeegee device. That is, the return chamber must accommodate not only the increased return flow rate from the squeegee device, but the bypass flow rate as well. Consequently, the flow rate of the return chamber must be much higher than that of the feed chamber. This is contradictory to Applicant's object of using a pump in which the flow rate of the feed chamber is equal to, or greater than, the flow rate of the return chamber (see specification page 5, lines 2-4; Figure 1).

Furthermore, the teaching of Heller does not address the above-described issue that Applicant addresses, i.e., the fixed ratio of feed and return flow rates. That is because Heller's teaching is directed to another operating issue, i.e., the removal of ink from the system for cleaning purposes. Rather than balancing flow rates, Heller's bypass 47 is used only during down time simply to remove ink from the feed line 27 between the discharge side of the feed chamber 19 and the trough 11 (see Heller Figure 2). As disclosed by Heller (page 5, paragraph [0065]):

For the purpose of preferably completely emptying at least the feed line 27, the circulating line system 5 is provided with a bypass 47, by which a medium connection can be produced between the feed line 27 and the suction side of the return pump 21. *Because the bypass 47 is not used when the metering system 3 is being supplied with the coating medium,* the bypass 47 can preferably be shut off completely and can be opened as required, the performance of which, in an exemplary embodiment of the circulating line system 5 illustrated in FIGS. 1 to 4, is advantageously carried out by the first valve device 31. (Emphasis added)

Accordingly, in order to empty the feed line, Heller's bypass is connected to *the suction side of the return chamber*. That is not Applicant's claimed invention, in which the first bypass line departs from the ink feed line and leads directly to the ink tank.

Since Heller does not meet each feature of the claimed invention, Heller does not anticipate the invention defined by Applicant's claim 17. Claims 18, 20, and 22 are allowable because they depend from claim 17, and for other reasons.

35 U.S.C. § 103(a) - Heller

Claims 19, 21, and 23-25 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Heller.

The rejection of claims 19, 21, and 23-25 under § 103(a) based on Heller is similarly deemed to be obviated. For at least the following reasons, the disclosure of Heller would not have rendered obvious Applicant's claimed invention.

First, claim 19 depends directly from claim 17 and claim 21 depends indirectly from claim 17. Claim 17 is allowable for the reasons articulated in response to the rejection under § 102(e) based on Heller. Claims 19 and 21 are allowable because they depend from claim 17, and for other reasons.

Second, with regard to the rejection of claims 23-25, instant claim 23 defines a device that includes in pertinent part the feature of "the first bypass line departing from the ink feed line on a discharge side of the ink feed chamber and communicating the diverted feed ink *without supplemental pumping thereof* to an ink tank."

As indicated above, however, Heller teaches that the bypass 47 departs from the feed line 27 at the discharge side of the feed chamber 19 *and connects to the return line 41 on the suction side of the return chamber 21*. Therefore, Heller pumps the bypassed ink with return chamber 21 in order to deliver the bypassed ink to the ink tank. That is not Applicant's claimed device, which does not require Heller's supplemental pumping step.

Because of the aforementioned differences, there is simply no teaching in Heller that would have led one to modify the reference in a way that would result in the device defined by Applicant's instant claim 23. Accordingly, the disclosure of Heller would not have rendered obvious the invention defined by claim 23. Claims 24 and 25 are allowable because they depend from claim 23, and for other reasons.

35 U.S.C. § 103(a) - Heller and Chou

Claims 1-16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Heller in view of U.S. Patent No. 6,698,353 to Chou et al. ("Chou").

The rejection of claims 1-16 under § 103(a) based on Heller and Chou is also respectfully deemed to be obviated. For at least the following reasons, the combined disclosures of Heller and Chou would not have rendered obvious Applicant's claimed invention.

First, the combined disclosures of Heller and Chou do not teach all of Applicant's claim features. Chou fails to rectify any of the above-described deficiencies of Heller. Chou addresses the problem of providing a printing deck with an ink that has a proper ink/water balance. The examiner relies upon Chou's disclosure of the device depicted in Figure 2. Chou's Figure 2 shows a mixing and dispersing apparatus 56 from which the ink is pumped by the pump 80 through the feed lines 52 and 59 to the ink distribution rail 60. The ink distribution rail 60 is also connected to a

conduit 62 in order to feed the ink back to the mixing and dispersing apparatus 56. Parts of the liquid can be diverted to the conduit 61 if an overflow limit within the mixing and dispersing apparatus is exceeded. Regardless of this teaching, however, Chou fails to teach Applicant's claimed feed ink bypass process feature.

Second, there is simply no teaching in either Heller or Chou that would have led one to select the references and combine them in a way that would result in the process defined by Applicant's instant claim 1. As indicated above, Heller does not address the issue that Applicant addresses, i.e., the fixed ratio of feed and return flow rates. Heller's teaching is directed to another operating issue, i.e., the removal of ink from the system for cleaning purposes.

Furthermore, for at least the following reason, Heller's configuration would not work in Applicant's printing process. If, for example, a pump is used in which both chambers have the same throughput capacity, both chambers deliver the same volume per time unit. However, in Applicant's printing process, the chamber 4 must pump a high volume because the ink is mixed with air within the squeegee device. Consequently, the chamber 3 has to pump the same volume, which results in a higher amount of ink than needed. Therefore, according to Applicant's claimed process, a bypassed portion of the ink is delivered directly to the ink tank. According to Heller, however, this part of the ink is directed to

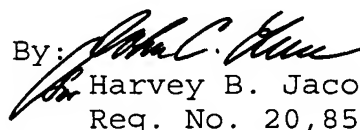
the suction side of the pump 21 so that the amount of ink that the pump 21 must pump is increased. This means that Heller's pump 21 must have an even higher capacity as compared to a configuration without a bypass line. And, Chou's teaching adds nothing that would rectify any of Heller's deficiencies.

Therefore, the combined disclosures of Heller and Chou would not have rendered obvious the process defined by instant claim 1. Claims 4-16 are allowable because they depend from claim 1, and for other reasons.

In view of the foregoing, this application is now in condition for allowance. If the examiner believes that an interview might expedite prosecution, the examiner is invited to contact the undersigned.

Respectfully submitted,

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